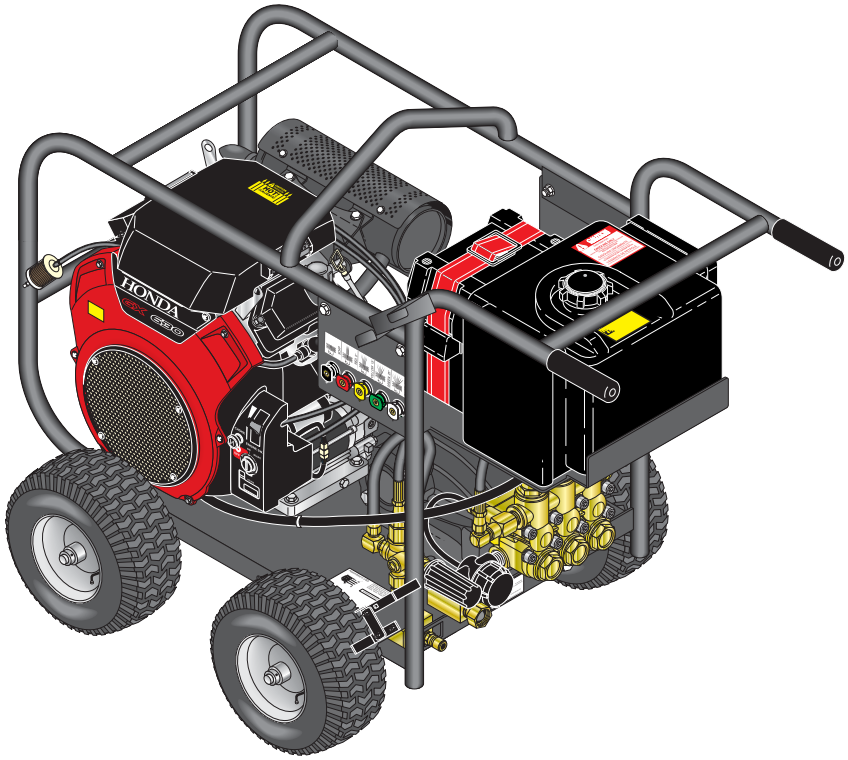
SERVICE MANUAL



MODEL #	ORDER #
BD-405039E	1.107-023.0
BD-455039E	1.107-024.0
BD-343089E	1.107-083.0
BD-373539	1.107-021.0
BD-404029	1.107-022.0
MP-455034E	1.107-002.0
MP-343084E	1.107-082.0
MP-373534	1.107-001.0
HD 4.0/50 Pb CAGE	1.575-200.0
HD 4.5/50 Pb CAGE	1.575-201.0
HD 3.4/30 Db CAGE	1.575-202.0
HD 3.7/35 Pb CAGE	1.575-205.0
HD 4.0/40 Pb CAGE	1.575-207.0
BR-405037E	1.107-147.0
BR-455037E	1.107-148.0
BR-343087E	1.107-149.0
BR-373537	1.107-150.0
BR-404027	1.107-151.0

9.800-414.0

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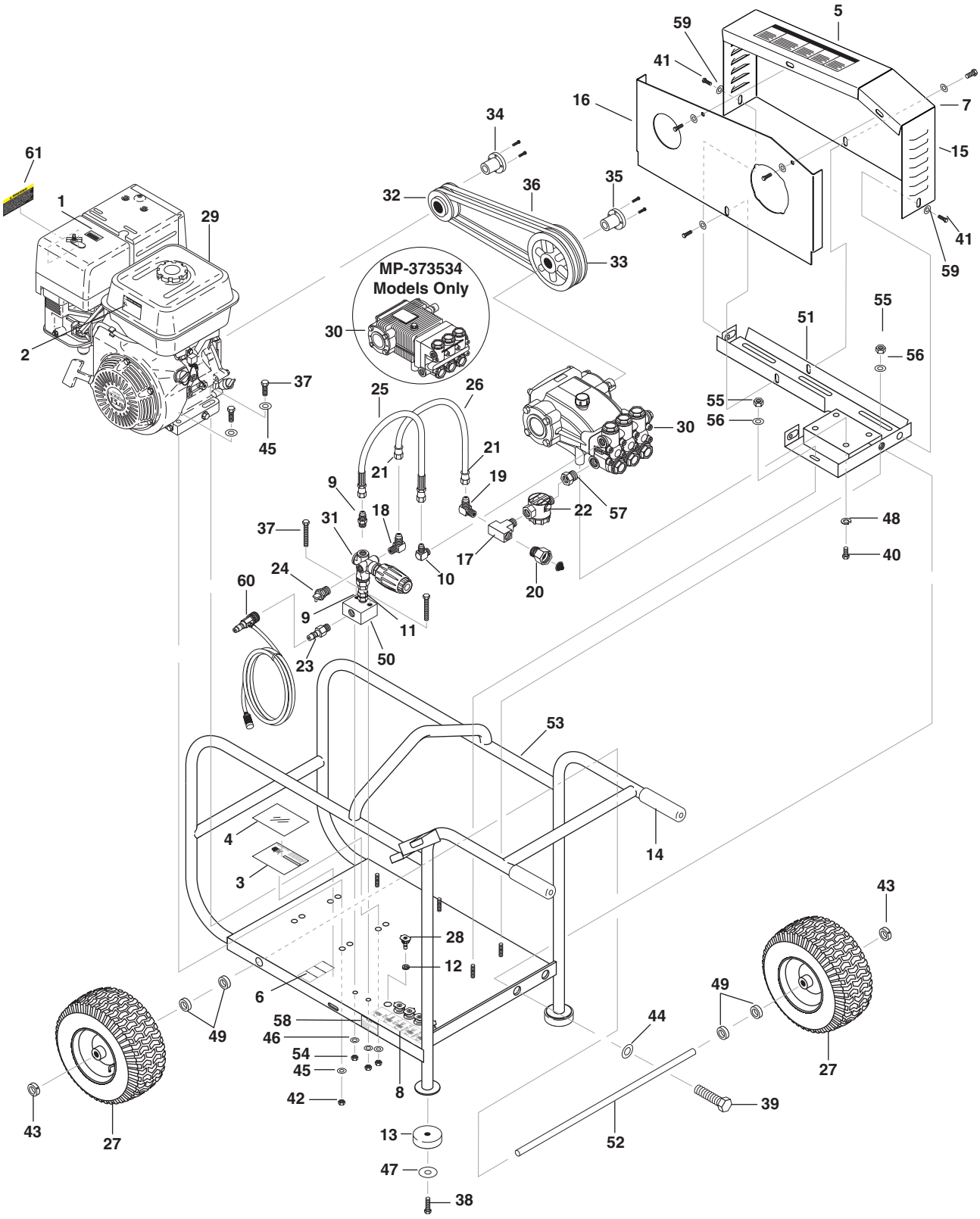
Model Number _____

Serial Number _____

Date of Purchase _____

The model and serial numbers will be found on a decal attached to the pressure washer. You should record both serial number and date of purchase and keep in a safe place for future reference.

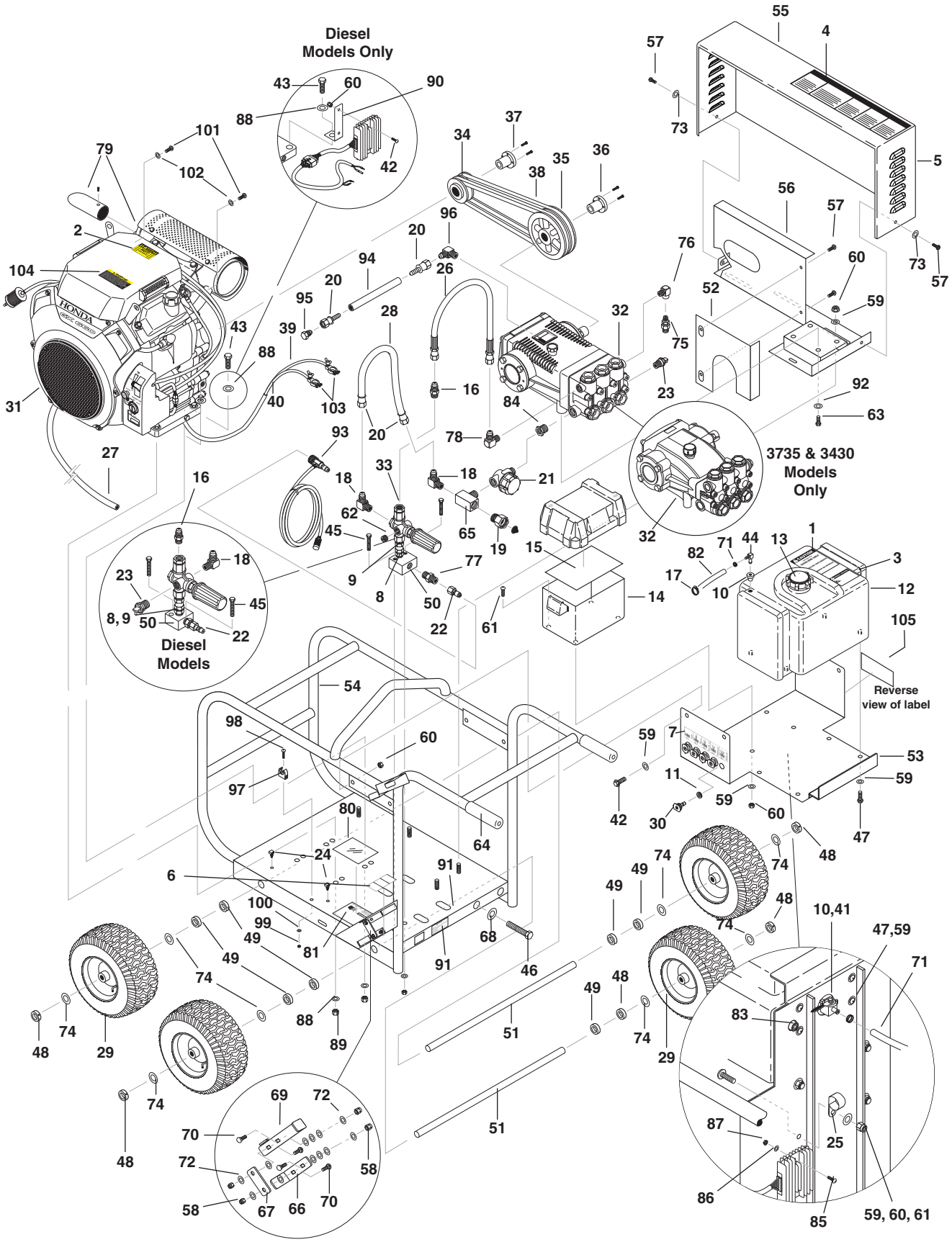
EXPLODED VIEW - SINGLE AXLE



EXPLODED VIEW PARTS LIST- SINGLE AXLE

ITEM	PART NO.	DESCRIPTION	QTY
1	9.800-006.0	Label, "Hot/Caliente" w/ Arrows Warning	1
2	9.800-008.0	Label, Danger Cool Engine	1
3	8.932-968.0	Label, Intended For Outdoor Use	1
4	9.800-034.0	Label, Clear Lexan, 2-1/4" x 4-1/2"	1
5	9.800-036.0	Label, Warning, Pictoral, Small	1
6	9.803-842.0	Label, Instructions	1
7	8.900-870.0	Label, Belt Guard, BR	1
	9.800-110.0	Label, Belt Guard, HD	1
	8.901-145.0	Label, Belt Guard, BD	1
	8.750-465.0	Label, Belt Guard ,MP	1
8	8.932-967.0	Label, Nozzle Identification	1
9	9.802-036.0	Nipple, 1/2" JIC, 3/8" Pipe	2
10	9.802-039.0	Elbow, 1/2" JIC, 3/8", 90°	1
11	9.802-048.0	Swivel, 1/2" JIC Fem, 3/8" Male	1
12	9.802-064.0	Grommet, Rubber, Nozzle Holder	5
13	9.802-066.0	Pad, Soft Rubber, 50 Duro	2
14	9.802-070.0	Grip, 1" Square, Handle	2
15	8.917-886.0	Plate, Belt guard front cover	1
16	8.917-889.0	Plate, Belt Guard Back Cover	1
17	9.802-118.0	Elbow, 1/2" Street, Brass	1
18	9.802-129.0	Elbow, 1/2" JIC x 3/8", 90°	1
19	9.802-131.0	Elbow, 1/2" JIC x 1/2", 90°	1
20	9.802-146.0	Swivel, 1/2" MP x 3/4" GHF w/ Strainer	1
21	9.802-151.0	Swivel, 1/2" JIC Fem, Push-On	2
22	9.802-163.0	Strainer, 1/2" PA, Inline Plastic	1
23	9.802-171.0	Nipple, 3/8" x 3/8" NPT ST Male	1
24	8.707-254.0	Pump Protector, 3/8" PTP	1
25	8.918-424.0	Hose, 3/8" x 25", 2 Wire, Pressure Loop	1
26	9.802-259.0	Hose, 1/2", Push-On	15"
27	9.802-271.0	Wheel & Tire Assy, 6" Steel Rim w/Tube	2
28	9.802-295.0	Nozzle, SAQCMEG 0004, Red (3200, 3500 PSI)	1
	9.802-296.0	Nozzle, SAQCMEG 1504, Yellow (3200, 3500 PSI)	1
	9.802-297.0	Nozzle, SAQCMEG 2504, Green (3200, 3500 PSI)	1
	9.802-298.0	Nozzle, SAQCMEG 4004, White (3200, 3500 PSI)	1
29		Engine, See Specifications	
30		Pump, See Specifications	
31		Unloader, See Specifications	
32		Engine Pulley, See Specifications	
33		Pump Pulley, See Specifications	
34		Engine Bushing, See Specifications	
35		Pump Bushing, See Specifications	
36		Belt, See Specifications	
37	9.802-728.0	Bolt, 3/8" x 2" Nc HH	6
38	9.802-723.0	Bolt, 3/8" x 1-1/2", Nc HH	2
39	9.802-740.0	Bolt, 1/2" x 3-1/2", Nc HH	1
40	9.802-744.0	Bolt, 10mm x 20mm, HH	4
41	9.802-700.0	Bolt, 1/4-20 x 3/4", Nc HH	6
42	9.197-003.0	Nut, 3/8" ESNA, Nc	4
43	9.802-782.0	Collar, 5/8" Bore Shaft 3010	2
44	9.802-809.0	Washer, 1/2" Flat	1
45	9.802-807.0	Washer, 3/8" Flat, SAE	8
46	9.802-807.0	Washer, 3/8" Flat, SAE	2
47	9.802-817.0	Washer, 3/8" x 1"	2
48	9.802-816.0	Washer, 7/16", Lock Split Ring	4
49	8.751-374.0	Spacer 5/8 X 1,25 Black	4
50	9.802-870.0	Block, Unloader, 3/8" x 3/8", 1.25 Steel	1
51	8.917-893.0	Assy black, Slider Pump/Belt Guard Mount	1
	8.917-888.0	Assy black, Slider Pump/Belt Guard Mount (BD-373539 only)	1
	8.918-127.0	Assy Blk, Slider, Pump/Sheet Metal Guard	1
52	8.908-396.0	Axle, Front	1
53	8.912-442.0	Assy, Weld, CW Cage, Small Black	1
	8.912-441.0	Assy, Weld, CW Cage, Small Red	1
54	9.197-003.0	Nut, 3/8" ESNA, Nc	2
55	9.802-776.0	Nut, 5/16" ESNA	4
56	8.718-980.0	Washer, 5/16" Flat	4
57	8.706-984.0	Adapter, 1/2 x 1/2 (5000 PSI Models)	1
58	9.800-049.0	Label, Manufacturer's Cleaning Solution	1
59	9.802-802.0	Washer, 1/4" Flat	7
60	9.802-225.0	Chemical Injector Assy, 3-5 GPM, .83	1
61	8.751-096.0	Label, Regulation 4442.6	1

EXPLODED VIEW - DUAL AXLE



EXPLODED VIEW PARTS - DUAL AXLE

ITEM	PART NO.	DESCRIPTION	QTY
1	9.800-001.0	Label, This Tank For Gas Only (5000 PSI Models)	1
	9.800-000.0	Label, Diesel (Diesel Models)	1
2	9.800-006.0	Label, “Hot/Caliente” w/Arrows	1
3	9.800-008.0	Label, Danger Cool Engine (5000 PSI Models)	1
4	9.800-036.0	Label, Warning Pictoral (Small)	1
5	9.800-047.0	▲ Label, Logo, Belt Guard, HD	1
	8.900-870.0	▲ Label, Logo, Belt Guard, BR	1
	8.901-144.0	▲ Label, Logo, Belt Guard, BD	1
	8.750-465.0	▲ Label, Logo, Belt Guard, MP	1
6	9.803-842.0	Label, Instructions	1
7	9.800-010.0	Label, Nozzle Identification	1
8	9.802-036.0	Nipple, 1/2” JIC, 3/8” Pipe	1
9	9.802-048.0	Swivel, 1/2" JIC Fem, 3/8" Male	1
10	9.802-053.0	Bushing, Rubber, Nitrile (Honda and Kohler/ Lombardini Models)	2
11	9.802-064.0	Grommet, Rubber, Nozzle Holder	5
12	9.802-079.0	Tank, Encore, 5 Gallon Tank	1
13	9.802-089.0	Cap, Fuel Tank, Plastic	1
14	9.802-090.0	Battery, Box	1
15	9.802-091.0	Plate, Battery Box, Small, Polypro	1
16	9.802-036.0	Nipple 1/2" JIC x 3/8" Male (Diesel & Vanguard Models)	1
	9.802-037.0	Nipple, 1/2" JIC x 3/8" Female (Honda Models)	1
17	8.750-933.0	Band Hose Clamp (Diesel Only)	1
18	9.802-131.0	Elbow, 1/2" JIC x 1/2", 90° (Honda and Kohler/ Lombardnini Models)	2
	9.802-129.0	Elbow, 1/2” JIC x 3/8”, 90° (4000 PSI Models)	1
19	9.802-146.0	Swivel, 1/2"MP x 3/4" GHF w/Strainer	1
20	9.802-151.0	Swivel, 1/2" JIC Fem, Push-On	4
21	9.802-163.0	Filter, 1/2" MPT, PA Inline Plastic	1
22	9.802-168.0	Nipple, 3/8" Female, 11,000 PSI (5000 PSI Models)	1
	9.802-171.0	Nipple, 3/8" x 3/8" NPT ST Male (Diesel Models Only)	1
23	9.802-182.0	Pump Protector, 1/2" PTP (5000 PSI Models)	1
	9.802-181.0	Pump Protector, 3/8" (Diesel Models Only)	1
24	9.803-844.0	Cable Tie, Wrap (Honda and Kohler/Lombardini Models)	2
25	9.802-207.0	Clamp, Round, 0.56 I.D. (5000 PSI Models)	1
26	8.918-421.0	Hose, 3/8" x 1/4", 2 Wire Pressure Loop	1
27	9.802-254.0	Hose, 1/4", Push-On, Fuel Line	4.75 ft.
28	9.802-259.0	Hose, 1/2", Push-On	1.25 ft.
29	9.802-271.0	Wheel & Tire Assembly, 6"	4
30	9.802-291.0	Nozzle, SACQMEG, 0003.5, Red (4.0 GPM/5000 PSI)	1
	9.802-292.0	Nozzle, SAQCMEG 1503.5, Yellow (4.0 GPM/5000 PSI)	1
	9.802-293.0	Nozzle, SAQCMEG, 2503.5, Green (4.0 GPM/5000 PSI)	1
	9.802-294.0	Nozzle, SAQCMEG 4003.5, White (4.0 GPM/5000 PSI)	1
	9.802-295.0	Nozzle, SAQCMEG 0004, Red (4.5 GPM, Diesel & 4000 PSI Models)	1
	9.802-296.0	Nozzle, SAQCMEG 1504, Yellow (4.5 GPM, Diesel & 4000 PSI Models)	1
	9.802-297.0	Nozzle, SAQCMEG 2504, Green (4.5 GPM, Diesel & 4000 PSI Models)	1
	9.802-298.0	Nozzle, SAQCMEG 4004, White (4.5 GPM, Diesel & 4000 PSI Models)	1
	9.802-311.0	Nozzle COMPL, QCEM-6540, Brass	1
31	Engine, See Specifications Pages		
32	Pump, See Specifications Pages		
33	Unloader, See Specifications Pages		
34	Engine Pulley, See Specifications Pages		
35	Pump Pulley, See Specifications Pages		
36	Pump Bushing, See Specifications Pages		
37	Engine Bushing, See Specifications Pages		
38	Belts, See Specifications Pages		
39	9.802-503.0	Cable, Battery, 32" Red, 4 Ga	1
40	9.802-504.0	Cable, Battery, 36" Black, 4 Ga	1
41	9.802-177.0	Valve, Shut-Off, 1/4 Turn	1
42	9.802-710.0	Bolt, 5/16" x 1", NC HH	4
43	9.802-727.0	Bolt, 3/8" x 1-3/4" (Diesel Only)	4
	9.802-728.0	Bolt, 3/8" x 2", NC, HH (5000 PSI Models Only)	4
44	9.802-054.0	Elbow, Fuel Tank, Zinc (Diesel Models Only)	1
45	9.802-728.0	Bolt, 3/8" x 2" NC, HH	2
46	9.803-845.0	Bolt, 1/2" x 5" NC HH Tap (5000 PSI Models Only)	1
	9.802-740.0	Bolt, 1/2" x 3-1/2", NC, HH (Diesel Models Only)	1

EXPLODED VIEW PARTS - DUAL AXLE

ITEM	PART NO.	DESCRIPTION	QTY
47	9.802-751.0	Screw, 1/4" x 5/8", Phil PH MS	4
48	9.802-782.0	Collar, 5/8" Bore Shaft	4
49	8.751-374.0	Spacer 5/8 X 1,25 Black	8
50	9.802-870.0	Block, Unloader, 3/8" x 3/8" Brass	1
51	8.918-839.0	Axle, Lrg Cw Cage, 31.25"	2
52	9.803-104.0	Guard, Belt, Rear Steel	1
53	8.912-480.0	Assembly, Weld, Battery Brkt, CW Cage, Black	1
	9.803-847.0	Assembly, Weld, Battery Brkt, CW Cage, Red	1
	8.912-502.0	Holder, Nozzle, Red	1
	8.921-215.0	Holder, Nozzle, Blk (HD 4.0/40, BR-404027)	1
54	9.802-964.0	Assembly, Weld, Cage, CW Black	1
	8.912-486.0	Assembly, Weld, Slider, CW Cage, Red	1
55	9.803-304.0	Guard, Belt, Front, CW Cage, Large	1
56	9.802-967.0	Assembly, Weld, Slider, CW Cage, Black	1
	8.912-497.0	Assy, Weld, Slider, CW Cage, Red	1
	9.803-846.0	Slider, Assembly, Black (Diesel)	1
57	9.802-765.0	Screw, 1/4" x 1/2" BH SOC CS	7
58	9.802-773.0	Nut, 1/4" ESNA, NC	4
59	9.802-804.0	Washer, 5/16" Flat, SAE	20
60	9.802-776.0	Nut, 5/16" ESNA, NC	12
61	9.802-708.0	Screw, 5/16"-18 x 3/4" M PH TRH	4
62	9.802-124.0	Plug, 1/4" Countersunk (5000 PSI Models Only)	1
63	9.802-744.0	Bolt, 10mm x 20mm, HH	4
64	9.802-070.0	Grip, 1" Square Handle	2
65	9.802-118.0	Tee, 1/2", Branch Male	1
66	9.802-996.0	Bracket, Brake Pad, Black	1
	8.912-019.0	Bracket, Brake Pad, Red	1
67	9.802-997.0	Linkage, Brake, Black	1
	8.912-020.0	Linkage, Brake, Red	1
68	9.802-809.0	Washer, 1/2" Flat	1
69	9.802-966.0	Handle, Break, CW Cage, Black	1
	8.912-495.0	Handle, Brake, CW Cage, Red	1
70	9.802-705.0	Bolt, Carriage, Zinc, 1/4"-20 x 1.0 PLT	4
71	9.802-210.0	Clamp, Hose, .46-.54 ST (Honda and Diesel Models)	2
72	9.802-802.0	Washer, 1/4" Flat, SAE	12
73	9.802-803.0	Washer, 1/4" Flat, Sae, Blk, Znc	5
74	9.802-810.0	Washer, 5/8" Flat	8
75	9.803-843.0	Valve, Safety Relief, 6000PSI (5000 PSI Models Only)	1
76	9.802-030.0	Elbow, 3/8" Street, Female (5000 PSI Models Only)	1
77	8.705-974.0	Nipple, 3/8" Hex Steel (5000 PSI Models Only)	1
78	9.802-039.0	Elbow, 1/2" JIC, 3/8", 90°	1
79	8.750-497.0	Muffler, Honda,GX630/660 Right (5000 PSI Models Only)	1
	8.915-687.0	▲ Deflector, Exhaust, Honda	1
	9.803-631.0	▲ Muffler, Exhaust, Vanguard	1
	9.803-867.0	▲ Guard, Muffler, Vanguard	1
	9.802-868.0	▲ Brace, Muffler Guard	1
	8.718-028.0	▲ Muffler, Deflector, Vanguard	1
80	9.800-034.0	Clear Lexan	1
81	9.800-014.0	Label, Intended For Outdoor Use	1
82	9.802-254.0	Hose, 1/4 Push-On (Diesel)	7.66 ft.
83	9.802-035.0	Plug, 1/8" Square Head, Black	1
84	9.802-148.0	Adaptor, 1/2" x 1/2"	1
85	9.802-770.0	Screw, 1/4" x 1" (5000 PSI)	2
86	9.802-803.0	Washer, 1/4" Flat, SAE, Black (5000 PSI Models)	2
87	9.802-773.0	Nut, 1/4" ESNA (5000 PSI)	2
88	9-802-807.0	Washer, 3/8" Flat	10
89	9.197-003.0	Nut, 3/8" ESNA	6
90	9.803-305.0	Bracket, Regulator	1
91	9.800-049.0	Label, Manufacturer's Cleaning Solution	1
92	9.802-816.0	Washer, 7/16" Lock, Split Ring	4
93	9.802-225.0	Chemical Injector Assy., 3-5 GPM,.83 (Diesel & Vanguard)	1
	9.802-226.0	Downstream Inj. Assy, 5000 PSI (5000 PSI Models Only)	1
94	9.802-259.0	Hose, 1/2" Push-On	14"
95	9.802-126.0	Plug, 1/2" JIC	1
96	9.802-129.0	Elbow, 1/2" JIC x 3/8"	1
97	9.802-203.0	Clamp, 1/2"	1
98	9.802-771.0	Screw, 10/32"	1
99	9.804-567.0	Nut, 10/32"1	
100	9.802-802.0	Washer, 1/4" Flat, SAE	1
101	9.802-741.0	Bolt 8mm x 16mm (5000 PSI)	4
102	9.802-813.0	Split Washer 5/16 (5000 PSI)	4
103	8.716-608.0	Terminal Battery Marine	2
104	8.751-096.0	Label, Regulation 4442.6	1
105	8.704-660.0	Label, Die-cut (BR Only)	1

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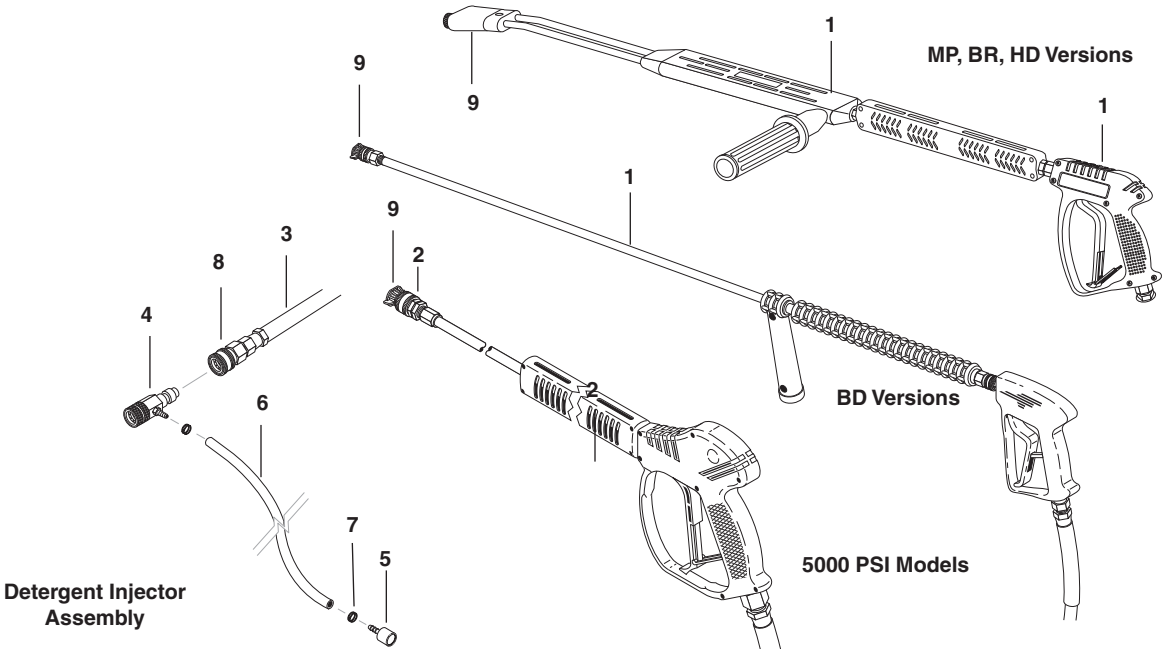
HOSE & SPRAY GUN ASSEMBLY AND PARTS LIST



ITEM	PART NO.	DESCRIPTION	QTY
1	9.802-222.0	Wand, VP W/Coupler & Nozzle X-Series (BR and HD)	1
	8.711-293.0	Wand, VP Lance, AL344 w/Coupler & Soap Nozzle (MP)	1
	8.904-425.0	Wand, Side Grip, 47.5" w/Couplers (BD Models)	1
	8.725-388.0	Wand, Single, 48" Insulated W/ Side Grip	1
	9.802-164.0	Coupler, 1/4" Female Brass (BD Models)	1
	8.710-384.0	Gun, St-1500, 5000 PSI, 10.4 Gpm (BR and HD Models)	1
	8.751-234.0	Gun, Landa, L1050, 5000 PSI 10.4 GPM	1
	8.904-490.0	Spray Gun Assembly with Nipple, Hotsy	1
	8.751-235.0	Gun, Hotsy, H1050, 5000 PSI 10.4 GPM	1
2	9.802-228.0	Spray Gun Assy w/ Wand & Coupler (5000 PSI Models)	1
	9.802-227.0	Spray Gun Wand 5000 PSI 52" (5000 PSI Models)	1
	9.802-165.0	Coupler 1/4" Male Brass	1
3	8.739-331.0	Hose, 3/8" x 50', 2W, TF, KA, SO-SW, CP (BR and HD Models to 4000 PSI)	1
	8.739-346.0	Hose, 3/8" x 50', 2W, TS, KA SO-SW, HP-CP (BR and HD Models to 5000 PSI)	1
	8.739-330.0	Hose, 3/8" x 50', 2W, TF, LA SO-SW, CP (MP to 4000 PSI)	1
	8.918-088.0	Hose, 3/8" x 50', 2W, TS SO-SW, HIGH PRESS CP (MP Models to 5000 PSI)	1
	8.739-347.0	Hose, 3/8" x 50', 2W, TF, HO SO-SW, CP (BD to 4000 PSI)	1
	8.739-332.0	Hose, 3/8" x 50', 2W, TS, HO SO-SW, HP-CP (BD to 5000 PSI)	1

ITEM	PART NO.	DESCRIPTION	QTY
4	9.802-225.0	Injector Assembly, 3-5 GPM, 0.083 (Models to 4000 PSI)	1
	9.802-216.0	Injector Chem Non Adj. 3-5 GPM. 0.083	1
	9.802-217.0	Injector Assembly, 5500 PSI (5000 PSI Models)	1
	9.802-167.0	Coupler, 3/8" Fem, 11,000 PSI	1
	9.802-168.0	Nipple, 3/8" Fem, 11,000 PSI	1
5	8.707-057.0	Strainer, Plastic, 1/4" Hose Barb	1
6	9.802-251.0	Tube, 1/4" X 1/2", Clear Vinyl	6 ft.
7	6.390-126.0	Clamp, Hose, .46-.54 ST	2
8	9.802-167.0	Coupler, 3/8" Fem, 11,000 PSI Snap-Tite (5000 PSI Models)	1
	9.802-166.0	Coupler, 3/8" Female	1
9	9.802-295.0	Nozzle Saqcmeg, 0004, Red (All Except 4 GPM/5000 PSI)	1
	9.802-296.0	Nozzle Saqcmeg, 1504, Yellow (All Except 4 GPM/5000 PSI)	1
	9.802-297.0	Nozzle Saqcmeg, 2504, Green (All Except 4 GPM/5000 PSI)	1
	9.802-298.0	Nozzle Saqcmeg, 4004, White (All Except 4 GPM/5000 PSI)	1
	8.708-713.0	▲ Nozzle Kit, Size 04, 4-Pack (All Except 4 GPM/5000 PSI)	1
	9.802-291.0	Nozzle Saqcmeg, 0003.5, Red (4 GPM/5000 PSI)	1
	9.802-292.0	Nozzle Saqcmeg, 1503.5, Yellow (4 GPM/5000 PSI Models)	1
	9.802-293.0	Nozzle Saqcmeg, 2503.5, Green (4 GPM/5000 PSI Models)	1
	9.802-294.0	Nozzle Saqcmeg, 4003.5, White (4 GPM/5000 PSI Models)	1
	8.708-712.0	▲ Nozzle, Kit, Size 03.5, 4-Pack (4 GPM/5000 PSI)	1
	9.802-311.0	Nozzle, COMPL, QCHEM-6540, Brass	1

▲ Not Shown

SPECIFICATIONS

HD Models

Machine Model	Engine Pulley	Pulley Description	Engine Bushing#	Bushing Description	Pump Pulley	Pulley Description	Pump Bushing#
HD-4.0/50 Pb Cage	9.802-392.0	3TB34	9.802-404.0	P2 x 1"	9.802-396.0	3BK90H	9.802-403.0
HD-4.5/50 Pb Cage	9.802-392.0	3TB34	9.802-405.0	P2 x 1-1/8"	8.715-618.0	3BK80H	9.802-403.0
HD-3.4/30 Db Cage	9.802-383.0	2BK36H	9.802-399.0	H x 1"	9.802-388.0	2BK67H	9.802-402.0
HD-3.7/35 Pb Cage	8.715-576.0	2BK32H	9.802-399.0	H x 1"	8.715-593.0	2BK90H	9.802-402.0
HD-4.0/40 Pb Cage	9.802-382.0	2BK34H	9.802-399.0	H x 1"	8.715-593.0	2BK90H	9.802-403.0

BR Models

Machine Model	Engine Pulley	Pulley Description	Engine Bushing#	Bushing Description	Pump Pulley	Pulley Description	Pump Bushing#
BR-405037E	9.802-392.0	3TB34	9.802-404.0	P2 x 1"	9.802-396.0	3BK90H	9.802-403.0
BR-455037E	9.802-392.0	3TB34	9.802-405.0	P2 x 1-1/8"	8.715-618.0	3BK80H	9.802-403.0
BR-343087E	9.802-383.0	2BK36H	9.802-399.0	H x 1"	9.802-388.0	2BK67H	9.802-402.0
BR-373537	8.715-576.0	2BK32H	9.802-399.0	H x 1"	8.715-593.0	2BK90H	9.802-402.0
BR-404027	9.802-382.0	2BK34H	9.802-399.0	H x 1"	8.715-593.0	2BK90H	9.802-403.0

BD Models

Machine Model	Engine Pulley	Pulley Description	Engine Bushing#	Bushing Description	Pump Pulley	Pulley Description	Pump Bushing#
BD-405037E	9.802-392.0	3TB34	9.802-404.0	P2 x 1"	9.802-396.0	3BK90H	9.802-403.0
BD-455039E	9.802-392.0	3TB34	9.802-405.0	P2 x 1-1/8"	8.715-618.0	3BK80H	9.802-403.0
BD-343089E	9.802-383.0	2BK36H	9.802-399.0	H x 1"	9.802-388.0	2BK67H	9.802-402.0
BD-373539	8.715-576.0	2BK32H	9.802-399.0	H x 1"	8.715-593.0	2BK90H	9.802-402.0
BD-404029	9.802-382.0	2BK34H	9.802-399.0	H x 1"	8.715-593.0	2BK90H	9.802-403.0

MP Models

Machine Model	Engine Pulley	Pulley Description	Engine Bushing#	Bushing Description	Pump Pulley	Pulley Description	Pump Bushing#
MP-455034E	9.802-392.0	3TB34	9.802-405.0	P2 x 1-1/8"	8.715-618.0	3BK80H	9.802-403.0
MP-343084E	9.802-383.0	2BK36H	9.802-399.0	H x 1"	9.802-388.0	2BK67H	9.802-402.0
MP-373534	8.715-576.0	2BK32H	9.802-399.0	H x 1"	8.715-593.0	2BK90H	9.802-402.0

SPECIFICATIONS

Machine Description	Bushing Model	Belt Part No.	Belt Desc./Qty.	Pump Part No.	Unloader Part No.	Engine Description	Engine Part No.
HD-4.0/50 Pb Cage	25mm	8.749-965.0	3BX42 (1)	9.804-491.0	9.802-360.0	GX630 (688cc)	8.750-495.0
HD-4.5/50 Pb Cage	25mm	8.749-965.0	3BX42 (1)	9.804-491.0	9.802-360.0	GX660 (688cc)	8.750-496.0
HD-3.4/30 Db Cage	25mm	9.802-418.0	BX39 (2)	8.751-186.0	8.750-300.0	KD420 (401cc)	9.802-328.0
HD-3.7/35 Pb Cage	24mm	9.802-418.0	BX39 (2)	8.751-189.0	8.750-300.0	GX390 (390cc)	8.750-580.0
HD-4.0/40 Pb Cage	25mm	9.802-420.0	BX43 (2)	9.802-345.0	8.750-300.0	Vanguard (479cc)	8.715-065.0

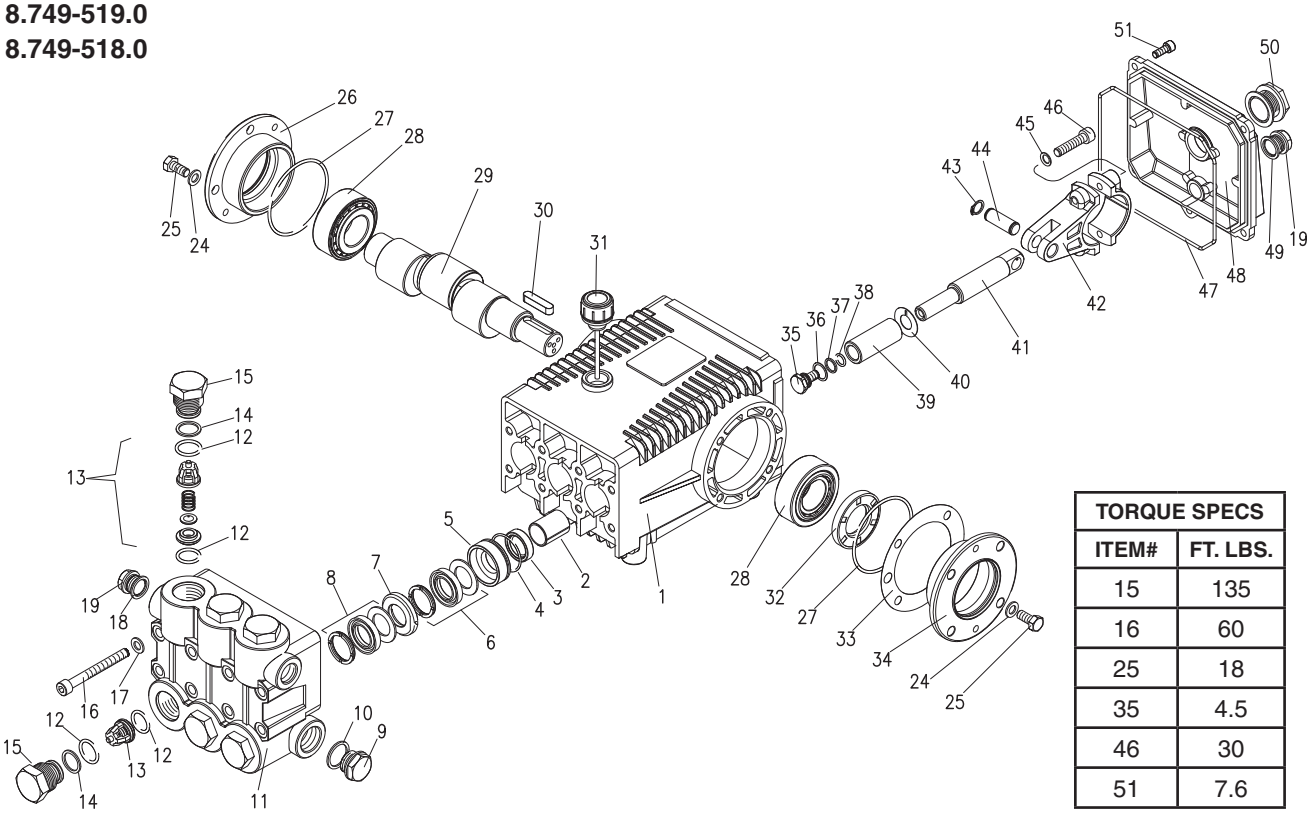
Machine Description	Bushing Model	Belt Part No.	Belt Desc./Qty.	Pump Part No.	Unloader Part No.	Engine Description	Engine Part No.
BR-405037E	25mm	8.749-965.0	3BX42 (1)	9.804-491.0	9.802-360.0	GX630 (688cc)	8.750-495.0
BR-455037E	25mm	8.749-965.0	3BX42 (1)	9.804-491.0	9.802-360.0	GX660 (688cc)	8.750-496.0
BR-343087E	25mm	9.802-418.0	BX39 (2)	8.751-186.0	8.750-300.0	KD420 (401cc)	9.802-328.0
BR-373537	24mm	9.802-418.0	BX39 (2)	8.751-189.0	8.750-300.0	GX390 (390cc)	8.750-580.0
BR-404027	25mm	9.802-420.0	BX43 (2)	9.802-345.0	8.750-300.0	Vanguard (479cc)	8.715-065.0

Machine Description	Bushing Model	Belt Part No.	Belt Desc./Qty.	Pump Part No.	Unloader Part No.	Engine Description	Engine Part No.
BD-405037E	25mm	8.749-965.0	3BX42 (1)	8.749-519.0	9.802-360.0	GX630 (688cc)	8.750-495.0
BD-455039E	25mm	8.749-965.0	3BX42 (1)	8.749-519.0	9.802-360.0	GX660 (688cc)	8.750-496.0
BD-343089E	25mm	9.802-418.0	BX39 (2)	8.751-179.0	8.750-300.0	KD420 (401cc)	9.802-328.0
BD-373539	24mm	9.802-418.0	BX39 (2)	8.751-180.0	8.750-300.0	GX390 (390cc)	8.750-580.0
BD-404029	25mm	9.802-420.0	BX43 (2)	8.715-242.0	8.750-300.0	Vanguard (479cc)	8.715-065.0

Machine Description	Bushing Model	Belt Part No.	Belt Desc./Qty.	Pump Part No.	Unloader Part No.	Engine Description	Engine Part No.
MP-455034E	25mm	8.749-965.0	3BX42 (1)	8.749-518.0	9.802-360.0	GX660 (688cc)	8.750-496.0
MP-343084E	25mm	9.802-418.0	3BX39 (1)	8.751-166.0	8.750-300.0	KD420 (401cc)	9.802-328.0
MP-373534	24mm	9.802-418.0	BX39 (2)	8.904-869.0	8.750-300.0	GX390 (390cc)	8.750-580.0

H SERIES PUMP EXPLODED VIEW

9.804-491.0
8.749-519.0
8.749-518.0



TORQUE SPECS	
ITEM#	FT. LBS.
15	135
16	60
25	18
35	4.5
46	30
51	7.6

H SERIES PUMP EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	9.803-163.0	Crankcase	1
2	9.803-195.0	Plunger Guide	3
3*	9.802-606.0	Plunger Oil Seal	3
4*	9.803-190.0	O-Ring Ø1.78 x 37.82	3
5*	9.804-494.0	Pressure Ring 18mm	3
6*	9.804-495.0	"U" Seal, dia 18 x 26mm	3
7*	9.804-496.0	Support Ring 18mm	3
8*	9.804-497.0	"U" Seal, dia. 18 x 28mm	3
9	9.802-926.0	Brass Plug, 1/2	1
10	9.803-199.0	Copper Washer 3/4	1
11	9.803-290.0	Manifold Housing	1
12*	9.804-498.0	O-Ring Ø2.62 x 23.47	12
13*	9.804-499.0	Valve Assembly	6
14*	9.804-500.0	Teflon Ring	6
15	9.803-292.0	Valve Plug	6
16	9.802-942.0	Manifold Stud Bolt	8
17	9.802-890.0	Lock Washer	8
18	9.803-198.0	Copper Washer 3/8	1

ITEM	PART NO.	DESCRIPTION	QTY
19	9.802-925.0	Brass Plug 3/8	2
24	9.802-884.0	Washer	8
25	9.802-944.0	Hexagonal Screw	8
26	9.804-501.0	Closed Bearing Housing	1
27	9.803-186.0	"O" Ring Ø2.62 x 71.12	2
28	9.804-502.0	Roller Bearing	2
29	9.803-289.0	Crankshaft	1
30	9.803-293.0	Crankshaft Key	1
31	9.802-923.0	Oil Dip Stick	1
32	9.803-139.0	Crankshaft Seal	1
33	9.803-177.0	Shim	2
34	9.804-503.0	Bearing Housing	1
35*	9.802-936.0	Plunger Bolt	3
36*	9.802-885.0	Copper Spacer	3
37*	9.803-188.0	"O" Ring Ø1.78 x 7.66	3
38*	9.803-155.0	Teflon Ring	3
39*	9.804-504.0	Plunger 18mm	3
40*	9.802-888.0	Copper Spacer	3

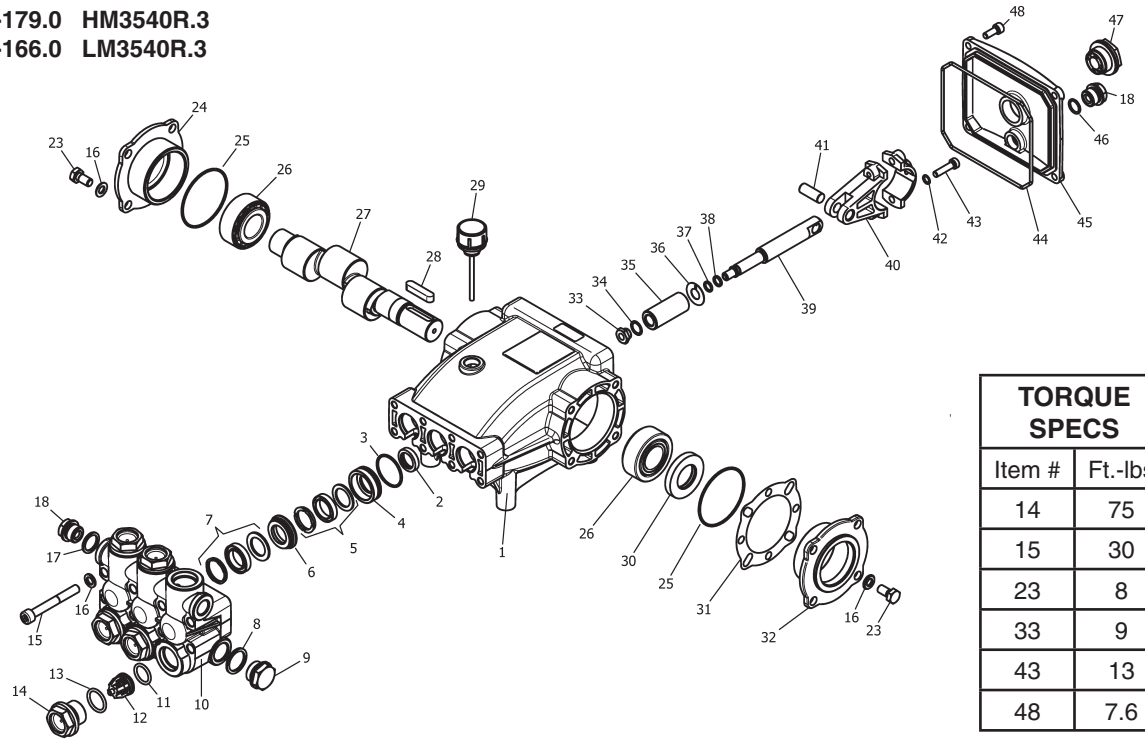
H SERIES PUMP EXPLODED VIEW PARTS LIST (CONT.)

ITEM	PART NO.	DESCRIPTION	QTY
41	9.803-294.0	Plunger Rod	3
42	9.803-157.0	Connecting Rod	3
43	9.802-912.0	Snap Ring	6
44	9.802-915.0	Connecting Rod Pin	3
45	9.802-889.0	Spring Washer	6
46	9.802-937.0	Connecting Rod Screw	6
47	9.803-194.0	"O" Ring Ø2.62 x 152.07	1
48	9.803-166.0	Crankcase Cover	1
49	9.803-197.0	Gasket, G3/8	1
50	9.803-202.0	Sight Glass, G3/4	1
51	9.802-939.0	Cover Screw	5

KIT NUMBERS	9.804-492.0	9.804-493.0	9.802-629.0	9.802-604.0	9.802-606.0
KIT DESCRIPTION	Plunger Seal 18 mm	Seal Packing 18 mm	Plunger 18 mm	Complete Valve	Plunger Oil Seals
ITEMS NUMBERS INCLUDED	4, 6, 8	4, 5, 6, 7, 8	35, 36, 37, 38, 39, 40	12, 13, 14	3
NUMBER OF CYLINDERS KIT WILL SERVICE	3	1	1	6	3

M.3 SERIES PUMP EXPLODED VIEW

8.751-189.0 KM4035R.3
8.751-180.0 HM4035R.3
8.751-186.0 KM3540R.3
8.751-179.0 HM3540R.3
8.751-166.0 LM3540R.3



TORQUE SPECS	
Item #	Ft.-lbs
14	75
15	30
23	8
33	9
43	13
48	7.6

M.3 SERIES PUMP EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	8.751-216.0	Crankcase	1
2*	See Kits Below	Plunger Oil seal	3
3*	See Kits Below	O-Ring Ø1.78 x 31.47	3
4*	See Kits Below	Pressure Ring	3
5*	See Kits Below	U-Seal	3
6*	See Kits Below	Intermediate Ring	3
7*	See Kits Below	U-Seal	3
8	9.803-199.0	Washer, Copper	1
9	9.802-926.0	Plug, Brass 1/2	1
10	8.751-218.0	Manifold Head	1
11*	See Kits Below	O-Ring Ø2.62 x 17.13	6
12*	See Kits Below	Valve Assembly	6
13*	See Kits Below	O-Ring Ø2.62 x 20.29	6
14	9.802-928.0	Valve Plug	6
15	9.802-938.0	Manifold Stud Bolt	8
16	9.802-884.0	Washer	16
17	9.803-198.0	Copper Washer 3/8	1
18	9.802-925.0	Brass Plug 3/8	2

ITEM	PART NO.	DESCRIPTION	QTY
23	9.802-944.0	Hexagonal Screw	8
24	8.717-210.0	Closed Bearing Housing	1
25	9.803-192.0	O-Ring Ø1.78 x 60.05	2
26	8.933-011.0	Tapered Roller Bearing	2
27	9.803-146.0	Crankshaft (3540)	1
	9.803-147.0	Crankshaft (4035)	1
28	9.803-167.0	Crankshaft Key	1
29	9.802-921.0	Oil Dip Stick	1
30	9.803-140.0	Crankshaft Seal	1
31	9.803-178.0	Shim	2
32	8.717-209.0	Bearing Housing	1
33*	See Kits Below	Plunger Nut, M8	3
34*	See Kits Below	Copper Spacer	3
35*	See Kits Below	Plunger (4035) Plunger (3540)	3 3
36*	See Kits Below	Copper Spacer	3
37*	See Kits Below	O-Ring Ring	3
38*	See Kits Below	Teflon Ring	3
39	9.803-144.0	Plunger Rod	3

M.3 SERIES PUMP EXPLODED VIEW PARTS LIST (CONT.)

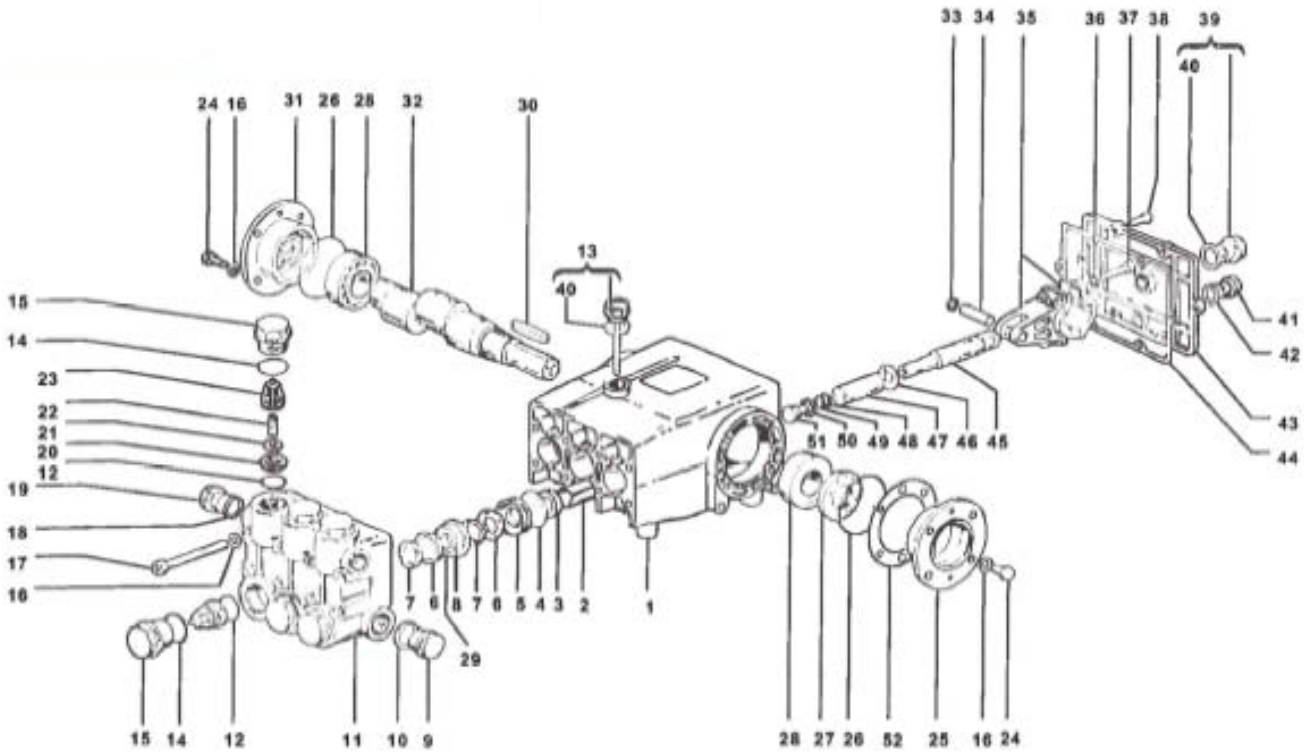
ITEM	PART NO.	DESCRIPTION	QTY
40	9.803-158.0	Connecting Rod	3
41	8.751-228.0	Connecting Rod Pin	3
42	9.803-218.0	Spring Washer	6
43	9.803-238.0	Connecting Rod Screw	6
44	70-060009	O-Ring, Ø2.62 x 126.67	1
45	8.751-229.0	Crankcase Cover	1
46	9.803-197.0	O-Ring, Ø1.78 x 14	1
47	9.803-202.0	Sight Glass 3/4	1
48	9.802-939.0	Cover Screw	5

* Available in kit (See below)

REPAIR KIT NO.	8.725-360.0	8.725-358.0	8.725-361.0	8.725-359.0	8.725-237.0	8.933-023.0	9.802-603.0	9.802-609.0
KIT DESCRIPTION	Plunger Seal 4035 18mm	Plunger Seal 3540 15mm	Complete Seal Packing 4035 18mm	Complete Seal Packing 3540 15mm	Plunger 4030 18mm	Plunger 3540 15mm	Complete Valve	Plunger Oil Seals
ITEM NUMBERS INCLUDED	3, 5, 7	3, 5, 7	3, 4, 5, 6, 7	3, 4, 5, 6, 7	33, 34, 35, 36, 37, 38	33, 34, 35, 36, 37, 38	11, 12, 13	2
NO. OF CYLINDERS KIT WILL SERVICE	3	3	1	1		1	6	3

HHC 930 PUMP EXPLODED VIEW

8.715-242.0



HHC 930 PUMP PARTS LIST

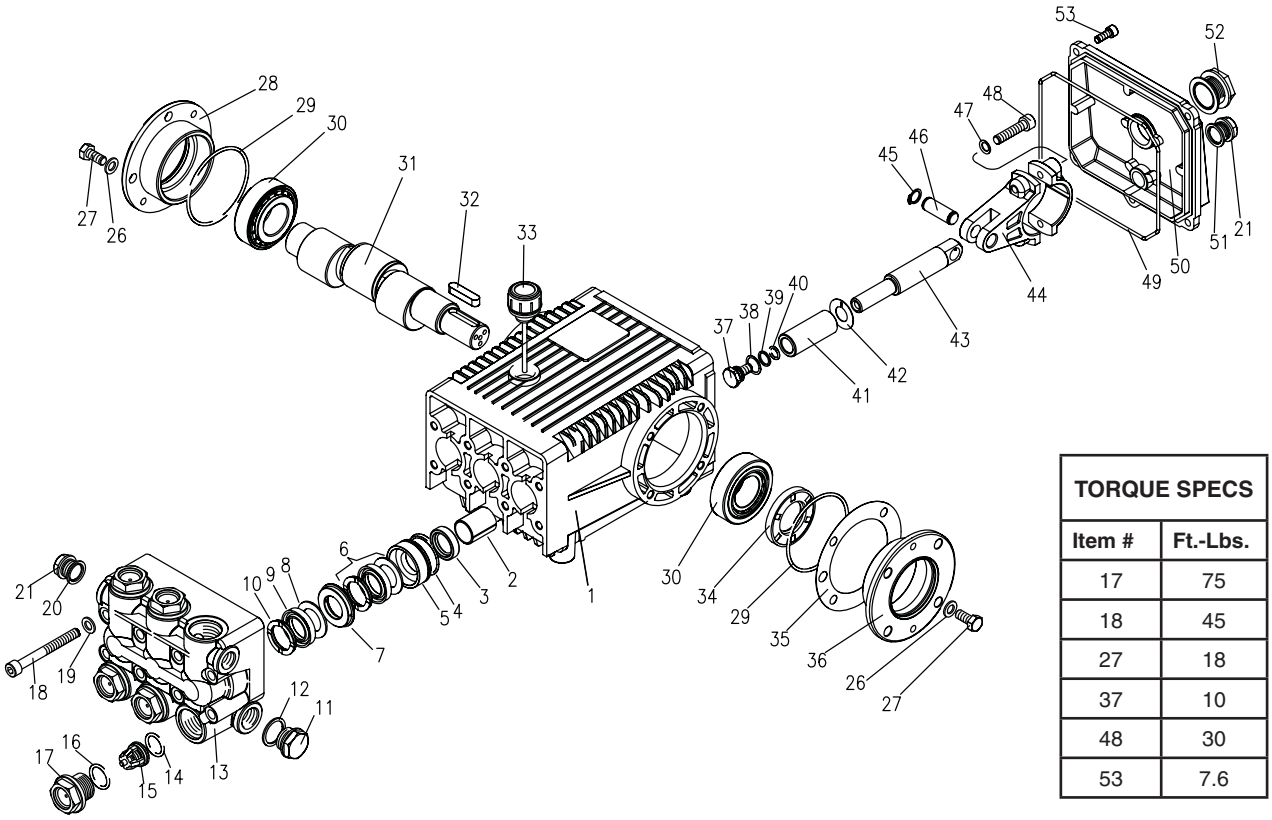
ITEM	PART NO.		DESCRIPTION	QTY
1	636930		Crankcase	1
2	860360		Plunger Guide	3
3		▼❖	Plunger Seal	3
4		▼◆	Pressure Ring O-Ring	3
5		▼	Pressure Ring 20 mm	3
6		▼◆	V-Sleeve 20 mm	6
7		▼◆	Support Ring 20 mm	6
8		▼	Intermediate Ring 20 mm	3
9	915630		Plug 3/8"	1
10	780565		Copper Washer 3/8"	1
11	784930		Manifold Housing	1
12		★	Valve Seat O-Ring	6
13	835280		Oil Dipstick	1
14		★	Manifold Plug O-Ring	6
15	829939		Manifold Plug	6
16	936931		Lock Washer	8
	780560		Washer	8
17	875937		Manifold Stud Bolt	8
18	836932		Copper Washer 1/2"	1

HHC 930 PUMP PARTS LIST

ITEM	PART NO.		DESCRIPTION	QTY
19	915634		Plug 1/2"	1
20		★	Valve Seat	6
21		★	Valve Plate	6
22		★	Valve Spring	6
23		★	Valve Cage	6
24	735314		Hex Screw	8
25	867750		Bearing Housing	1
26	926649		Bearing Housing O-Ring	2
27	926651		Crankshaft Seal	1
28	808401		Roller Bearing	2
29		▼◆	Spacer	3
30	753100		Crankshaft Key 8 x 7 x 50	1
31	615374		Closed Bearing Housing	1
32	630930		Single-Ended Crankshaft	1
33	926691		Connecting Rod Pin Snap Ring	6
34	914136		Connecting Rod Pin	3
35	928640		Connecting Rod Assembly	3
36	936933		Spring Washer	6
37	735312		Allen Screw	6
38	735313		Crankcase Cover Allen Screw	6
39	858430		Sight Glass 1/2"	1
40	855892		Gasket 1/2"	1
41	915630		Plug 3/8"	1
42	855893		Gasket 3/8"	1
43	826680		Crankcase Cover	1
44	855890		Crankcase Cover Gasket	1
45	829931		Plunger Rod	3
46		✪	Copper Spacer	3
47		✪	Plunger Sleeve 20 mm	3
48		✪	Teflon Ring	3
49		✪	Plunger Sleeve 20 mm	3
50		✪	Copper Spacer	3
51		✪	Plunger Assembly Bolt	3
52	944784		Shim	2
REPLACEMENT PARTS				
◆	8.717-582.0		Seal Packing Kit 20 mm	1
▼	8.717-583.0		Complete Seal Packing Kit 20 mm	3
★	8.717-591.0		Valve Assembly Kit	6
✪	8.717-586.0		Ceramic Sleeve Kit 20 mm	3
❖	8.717-585.0		Plunger Seal Kit	1

T.1 SERIES PUMP EXPLODED VIEW

9.802-345.0



TORQUE SPECS	
Item #	**Ft.-Lbs.**
17	75
18	45
27	18
37	10
48	30
53	7.6

T.1 SERIES PUMP EXPLODED VIEW & PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	9.804-604.0	Crankcase	1
2	9.803-195.0	Plunger Guide	3
3*	See Kit	Plunger Oil Seal	3
4*	See Kit	O-Ring Ø1.78 x 31. 47	3
5*	See Kit	Pressure Ring, Brass	3
6*	See Kit	"U" Seal Low Pressure	3
7*	See Kit	Intermediate Ring, Brass	3
8*	See Kit	Support Ring, Teflon Bronze	3
9*	See Kit	"U" Seal High Pressure	3
10*	See Kit	Support Ring	3
11	9.802-926.0	Brass Plug, 1/2"	1
12	9.803-199.0	Copper Washer 1/2"	1
13	9.802-933.0	Manifold Head	1
14*	See Kit	O-Ring Ø2.62 x 17.13	6
15*	See Kit	Valve Assembly	6
16	See Kit	O-Ring Ø2.62 x 20.29	6
17	9.802-928.0	Valve Plug	6
18	9.802-943.0	Manifold Stud Bolt	1

ITEM	PART NO.	DESCRIPTION	QTY
19	9.802-890.0	Washer	8
20	9.803-198.0	Copper Washer 3/8"	1
21	9.802-925.0	Brass Plug 3/8"	1
26	9.802-884.0	Washer	8
27	9.802-944.0	Hexagonal Screw	8
28	9.803-182.0	Closed Bearing Housing	1
29	9.803-186.0	O-Ring Ø2.62 x 71.12	2
30	9.803-160.0	Roller Bearing, Tapered	2
31	9.803-149.0	Crankshaft (4035.1)	1
32	9.803-167.0	Crankshaft Key	1
33	9.802-923.0	Oil Dip Stick	1
34	9.803-139.0	Crankshaft Seal	1
35	9.803-177.0	Shim	2
36	9.803-181.0	Bearing Housing	1
37*	See Kit	Plunger Bolt	3
38*	See Kit	Copper Spacer	38

T.1 SERIES PUMP EXPLODED VIEW & PARTS LIST

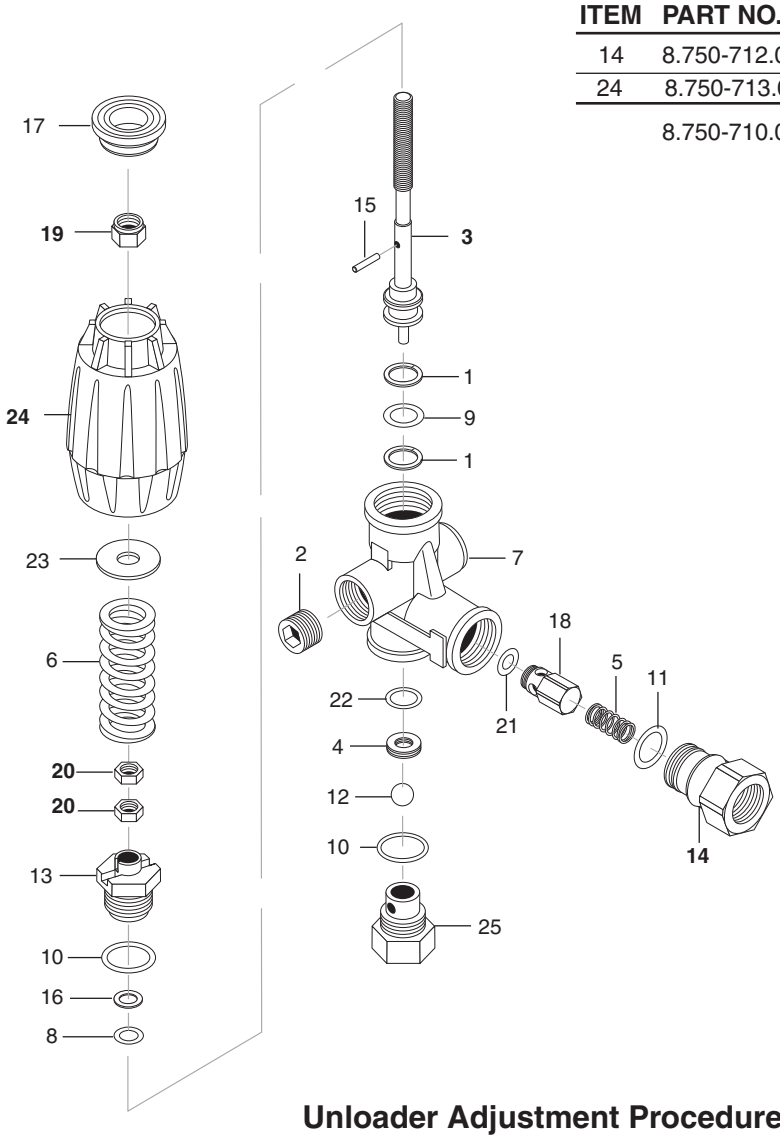
ITEM	PART NO.	DESCRIPTION	QTY
39*	See Kit	O-Ring Ø1.78 x10.82	3
40*	See Kit	Teflon Ring	3
41*	See Kit	Plunger	3
42*	See Kit	Copper Spacer	3
43	9.803-143.0	Plunger Rod	3
44	9.803-157.0	Connecting Rod	3
45	9.802-912.0	Snap Ring	6
46	9.802-915.0	Connecting Rod Pin	3
47	9.802-889.0	Spring Washer	6
48	9.802-937.0	Connecting Rod Screw	6
49	9.803-194.0	O-Ring Ø2.62 x 152.07	1
50	9.803-166.0	Crankcase Cover	1
51	9.803-197.0	Gasket, G3/8	1
52	9.803-202.0	Sight Glass G3/4	1
53	9.802-939.0	Cover Screw	5

* Part available in kit (See below)

REPAIR KIT NUMBER	**8.916-488.0**	**8.916-322.0**	**9.802-607.0**	**9.802-603.0**	**9.802-606.0**
KIT DESCRIPTION	Plunger "U" Seal 20mm 4035.1	"U" Seal Packing Assy 20mm 4035.1	Plunger 20mm 4035.1	Complete Valve	Plunger Oil Seals
ITEM NO.S INCLUDED	4, 6, 8, 9, 10	4, 5, 6, 7, 8, 9, 10,	37, 38, 39, 40, 41, 42	14, 15, 16	3
NUMBER OF CYLINDERS KIT WILL SERVICE	3	1	1	6	3

VRT3 UNLOADER EXPLODED VIEW AND PARTS LIST

8.750-300.0, 8 GPM, 4500 PSI EZ Start



ITEM	PART NO.	DESCRIPTION	QTY
14	8.750-712.0	Outlet Fitting	1
24	8.750-713.0	Knob, Unloader	1
	8.750-710.0	Repair Kit, VRT3, 4500 PSI (Kit Items: 1, 4, 8-12, 16, 21-22)	

Unloader Adjustment Procedures

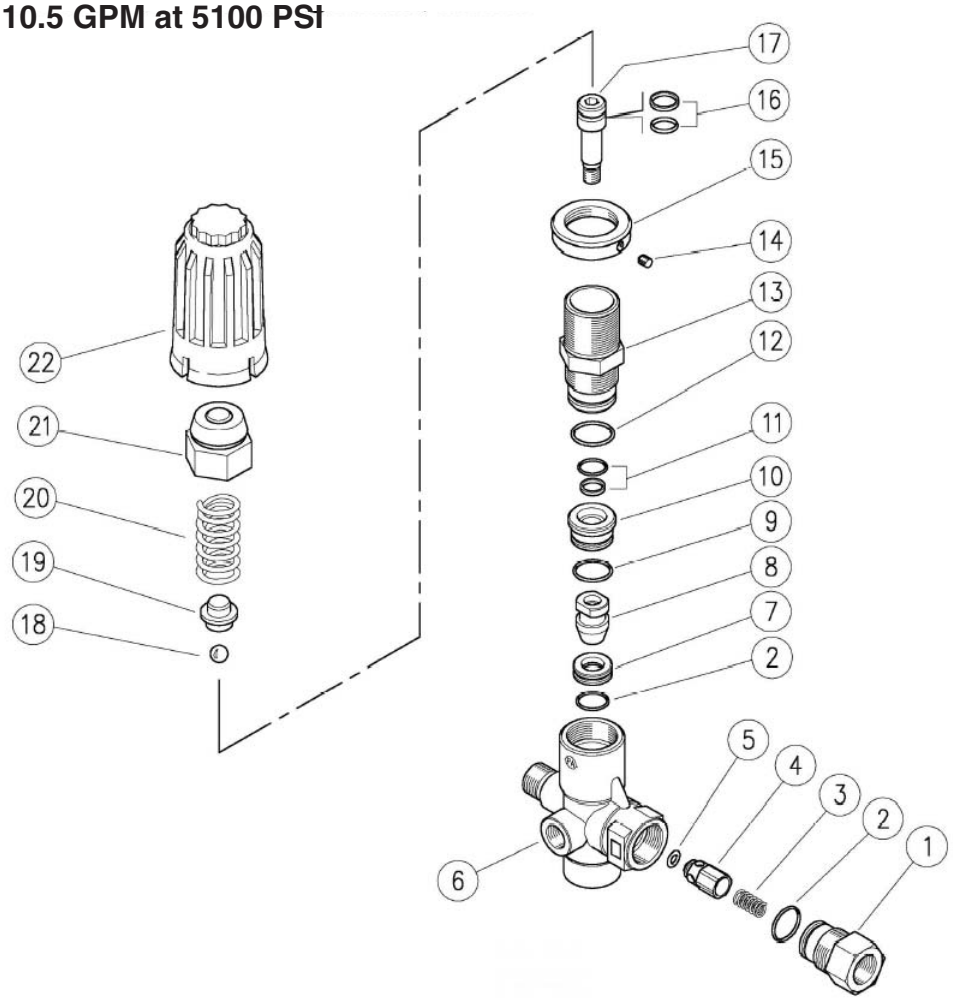
1. Remove lock nut (Item 19).
2. Remove adjustment knob (Item 24).
3. Loosen the two (2) nuts (Item 20), move them upward on stem (Item 3) until you see 4 or more threads below the nut.
4. Re-attach adjusting knob (Item 24).
5. Start machine. Open the trigger of the spray gun. Increase pressure by turning adjustment knob (Item 24) clockwise until pressure is at the desired operating pressure.
6. Remove the adjustment knob (Item 24), tighten the lower nut (Item 20) tightly against the upper nut (Item 20). Re-attach adjustment knob (Item 24) and screw down until contact is made with the nuts (Items 20). Screw down lock nut (Item 19) onto the stem (Item 3) until the threads cut into the nylon insert of the lock nut (Item 19).

***If adjustment knob (Item 24) **DOES NOT** make contact with upper nut (Items 20), remove adjusting knob (Item 24), re-adjust (raise) nuts (Items 20) on stem (Item 3) and re-attach adjustment knob (Item 24), then repeat step #6.

****If adjustment knob (Item 24) **DOES** make contact with upper nut; release the trigger of the spray gun and watch the pressure gauge for the pressure increase ("spike"). This "spike" **SHOULD NOT** exceed 500 psi above the operating pressure. If "spike" pressure exceeds the 500 psi limit, remove the adjusting knob (Item 24) and re-adjust (lower) the nuts (Items 20) on the stem (Item 3). Re-attach the adjusting knob (Item 24), then repeat step #6.

VB350/4 UNLOADER EXPLODED VIEW

9.802-360.0, 10.5 GPM at 5100 PSI



VB UNLOADER EXPLODED VIEW PARTS LIST

ITEM	PART #	DESCRIPTION	QTY
1	60.1811.31	3/8 Bsp F Nipple	1
2	10.3066.01*	O-Ring, 1.78 x 15.6 mm	2
3	60.0053.51	Spring	1
4	60.0052.51	Sst Check Valve	1
5	10.3213.08*	O-Ring, 3 x 6mm	1
6	60.1725.35	VB280-350 Brass Body	1
7	60.1809.51*	Seat	1
8	60.1808.51*	M 8 Shutter	1
9	10.3068.01*	O-Ring, 1.78 x 17.17 mm	1
10	60.1810.31	Spacer	1
11	60.0979.24*	VB280-350 Val. Pist. Seal Repair Set	1
12	10.3072.01*	O-Ring, 1.78 x 20.35 mm	1
13	60.0973.31	Piston Housing (60.1600.00)	1
	60.1805.31	Piston Housing (60.1700.00)	1
14	16.2100.00	M 4 x 4 mm Dowel	1
15	60.1728.31	Lock Nut	1

ITEM	PART #	DESCRIPTION	QTY
16	60.0978.24*	VB280-350 Val. Pist. Seal Repair Set	1
17	60.1806.51	M8 Piston	1
18	14.7443.10*	Sst 11/32" Ball	1
19	60.1813.31	Spring Guide	1
20	60.0975.61	4.2 mm Spring (60.1600.00)	1
	60-1812.61	4.5 x 47 mm Spring (60.1700.00)	1
21	60.1727.31	Brass Cap	1
22	60.1726.84	VB280 Black Plastic Knob (60.1600.00)	1
	60.1729.84	VB350.4 Red Plastic Knob (60.1700.00)	1

*Kit :

K1	60.1615.24	VB280-350.4 Spare Parts Kit Pcs. 11 x 1	

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
LOW OPERATING PRESSURE	Insufficient water supply. Closed faucet. Inlet hose kinked	Use larger garden hose; clean inlet water screen. Open faucet.
	Clogged inlet hose strainer	Check plumbing system for leaks. Retape leaks with teflon tape.
	Faulty or mis-adjusted unloader valve	Adjust unloader for proper pressure. Install repair kit when needed. Contact local dealer or technical support.
	Worn packing in pump	Contact local dealer.
	Machine has been stored in freezing temperatures	Thaw out machine completely, including hose, spray gun and wand.
	Slow engine RPM	Contact local dealer or technical support.
FLUCTUATING PRESSURE	Worn or dirty pump valves	Contact local dealer or technical support.
	Nozzle is obstructed	Use nozzle wire in accessory kit.
	Pump sucking air, inlet hose leaking	Check all pump lines and connections.
PRESSURE LOW AFTER PERIOD OF NORMAL USE	Nozzle worn	Replace nozzle.
	Unloader valve worn	Replace unloader valve.
ENGINE WILL NOT START OR STOPS WHILE OPERATING	Low oil shutdown	Fill engine with oil.
	Out of gas	Fill fuel tank.
	Water in gasoline	Drain gas tank; fill with clean fuel.
ENGINE IS OVERLOADED	Nozzle partially blocked	Clean nozzle.
	Excessive pressure from high engine RPM	Adjust engine throttle to lower RPM.
WATER OR OIL LEAKING FROM BOTTOM OF PUMP	A small amount of leaking is normal	If excessive leaking occurs, contact your local dealer.
PRESENCE OF WATER IN PUMP OIL	Water sprayed at machine	Change oil. Direct spray away from machine.
	High humidity in air	Check and change oil twice as often.
	Piston packing worn. Oil seal worn.	Contact local dealer or technical support.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
ENGINE OPERATES FOR 15 MIN. THEN STOPS	Not enough gas or engine oil	Fill tank with gas. Check oil level.
	Vapor lock developed by heat of day	Keep gas tank full to avoid vapor locking.
	Obstruction in fuel filter	Clean or replace fuel filter.
ENGINE LACKS POWER	Dirty air filter	Replace air filter.
ENGINE FALTERS	Choke is opened too soon	Move choke to halfway position until engine runs smoothly.
WATER DRIPPING FROM UNDER PUMP	Piston packing worn	Contact local dealer or technical support.
	O-Ring plunger retainer worn	Contact local dealer or technical support.
	Cracked piston	Contact local dealer or technical support.
OIL DRIPPING	Oil seal worn or damaged	Contact local deale or technical support r.
WATER LEAKING FROM PUMP PROTECTOR	Spray gun closed with machine running 5 minutes or longer	Open spray gun or turn off machine.
	Excess water supply pressure	Place a pressure regulator at end of 50' garden hose.
NO DETERGENT	Detergent suction tube not properly connected to machine	Check connection.
	Detergent is too thick	Dilute detergent. For best results, use our detergent.
	Detergent filter valve is at lowest setting	Set detergent filter valve to a higher setting.
	Filter on detergent suction tube is clogged	Run warm water through filter to remove debris.
	Damaged or clogged detergent suction tube	Remove obstruction or replace detergent suction tube.
	A high pressure nozzle is attached.	Replace with black detergent nozzle.
	Discharge nozzle is obstructed	Blow out or remove debris with fine needle.
GARDEN HOSE CONNECTION LEAKS	Loose fittings	Tighten fittings.
	Missing/worn rubber washer	Insert new washer.
SPRAY WAND LEAKS	Spray wand not properly attached	Slide the spray wand into the gun. Turn the wand collar clockwise onto the spray gun threads until tight.
	Broken o-ring	Contact local dealer to order an o-ring.
PUMP IS NOISY	Pump is sucking air	Check that hoses and fittings are air tight. Turn off machine and purge pump by squeezing trigger gun until a steady flow of water emerges through nozzle.

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